IN THE CLAIMS:

1. (Allowed) Radiation detection apparatus capable of detecting and locating events in a scene under surveillance, comprising:

a detector array and a lens arranged to define a first field of view of the apparatus and to provide a single focussed image of a distant scene on the array;

a reflector arranged between a plane of the array and a plane of the lens to define a second field of view which extends beyond the first field of view and to reflect onto the detector array radiation entering the lens from outside the first field of view; and

one or more processors for distinguishing events in the second field of view from those in the first field of view.

2. (Allowed) Apparatus as claimed in claim 1 in which the lens is plano-convex and a planar surface of the lens is directed towards the scene.

3. (Allowed) Apparatus as claimed in claim 1 in which the reflector has cylindrical symmetry about an optical axis of the lens.

4. (Allowed) Apparatus as claimed in claim 1 in which the reflector has one or more convex reflecting surfaces.

5. (Allowed) Apparatus as claimed in claim 1 in which the reflector has one or more planar reflecting surfaces.

6. (Allowed) Apparatus as claimed in claim 1 wherein the one or more processors comprise one or more pattern recognition algorithms.

7. (Allowed) Apparatus as claimed in claim 1 including a test source of radiation arranged to emit radiation onto the lens from outside the first field of view of the apparatus.

8. (Allowed) Apparatus as claimed in claim 7 in which the source illuminates different elements of the detector array at different times.

9. (Allowed) Apparatus as claimed in claim 7 further comprising a shielding member for shielding the detector array from the test source.

10. (Allowed) Apparatus as claimed in claim 7, further comprising a second reflector arranged to reflect radiation from the test source towards the lens.

11. (Allowed) Apparatus as claimed in claim 10 in which the second reflector has one or more concave surfaces.

12. (Allowed) Apparatus as claimed in claim 10 in which the second reflector is frusto-conical.

13. (Allowed) Apparatus as claimed in claim 10 in which the second reflector has one or more planar reflective surfaces.

14. (Allowed) Apparatus as claimed in claim 10 in which the second reflector has cylindrical symmetry about the optical axis of the lens.

15. (Allowed) Apparatus as claimed in claim 10 in which the reflector and the second reflector are arranged to reflect radiation onto the whole of the detector array.

16. (Allowed) Apparatus as claimed in claim 7 in which the lens is protected by a window and the source is located inside the window.

17. (Allowed) Apparatus as claimed in claim 16 in which the second reflector is located outside the window.

18. (Allowed) Apparatus as claimed in claim 7 wherein the test source has means for modulating its output, whereby radiation from the test source can be distinguished from radiation from a scene being viewed.

19. (Allowed) Apparatus as claimed in claim 7 including a microprocessor for switching on the test source at intervals.

20. (Allowed) Apparatus as claimed in claim 7 in which the test source comprises one or more emitters arranged about the optical axis of the lens.

21. (Allowed) Apparatus as claimed in claim 7 in which the source comprises one or more electrically heated filaments.

22. (Allowed) Apparatus as claimed in claim 7 in which the test source comprises a refractory metal film deposited on a substrate.

23. (Allowed) Apparatus as claimed in claim 16 in which the test source comprises a refractory metal film deposited on a substrate and the substrate is the window.

24. (Allowed) Apparatus as claimed in claim 7 in which the test source is a single continuous radiating element with circular symmetry about the optical axis of the lens.

25. (Allowed) Apparatus as claimed in claim 7 in which the source comprises one or more light emitting diodes.

26. (Allowed) Apparatus as claimed in claim 1 in which the array is an array of thermal detectors.

27. (Allowed) Apparatus as claimed in claim 26 in which the array is an array of pyroelectric detectors.

28. (Allowed) Apparatus as claimed in claim 1 in which the detector array is formed in or mounted on a semiconductor integrated circuit that is used to interrogate it.

29. (Allowed) Radiation detection apparatus capable of detecting and locating events in a scene under surveillance, comprising:

a two dimensional detector array and a lens arranged to define a first field of view of the apparatus and to provide a single focused image of a distant scene on the array; and

a reflector arranged between the plane of the array and the plane of the lens to define a second field of view which extends beyond the first field of view and to reflect onto the detector array radiation entering the lens from outside the first field of view.

30. (Allowed) The apparatus of claim 29, wherein the two dimensional detector array is a square or rectangular detector array.

31. (Allowed) The apparatus of claim 29, wherein the two dimensional detector array provides spatial information relating to the detected events.

32. (Allowed) The apparatus of claim 29, wherein the two dimensional detector array distinguishes events in the second field of view from those in the first field of view.